

**ABSTRACT**

The present invention relates to a linear or branched diene elastomer having cyclic vinyl units. A linear diene elastomer according to the invention results from at least one conjugated diene and it comprises cyclic vinyl units in a mass content of greater than or equal to 15% while having a number-average molecular weight falling within a range of from 10,000 to 300,000 g/mol. The invention also relates to a process for the production

of such a linear or branched diene elastomer including cyclic vinyl units in the above-stated content and having a number-average molecular weight ranging from 10,000 to 300,000 g/mol, such that said process includes the continuous reaction of at least one conjugated diene monomer in an inert aliphatic or alicyclic hydrocarbon solvent with a catalytic system comprising an organolithium initiator, a polar agent having two or more heteroatoms and an alkali metal salt of an aliphatic or alicyclic alcohol, where:

- (i) the (polar agent:initiator) molar ratio is greater than or equal to 3.
- (ii) the (salt:initiator) molar ratio falls within a range of from 0.01 to 2, and
- (iii) the (salt:polar agent) molar ratio falls within a range of from 0.001 to 0.5.